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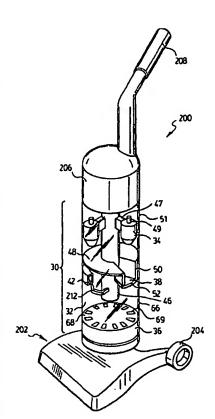
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[Continued on next page]

(54) Title: METHOD AND APPARATUS OF PARTICLE TRANSFER IN MULTI-STAGE PARTICLE SEPARATORS



(57) Abstract: An improved two-stage separator (30) uses reusable containers (36, 38) for collecting particles separated by each separation stage (32, 34). The reusable containers (36, 38) are constructed such that a user empties both reusable containers (36, 38) by the actions required to empty just one of the reusable containers (36, 38).

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INTERNATIONAL SEARCH REPORT

Int Lional Application No PCT/CA 01/00866

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A47L9/16 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) A47L B01D Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages 1,2,5, P.X WO OO 42292 A (FANTOM TECHNOLOGIES INC.) 11, 19, 20 July 2000 (2000-07-20) 27,32 page 33, line 6 -page 38, line 10; claims 24-31: figure 22B 1,11,27, Α US 3 425 192 A (DAVIS, N.E.) 32 4 February 1969 (1969-02-04) cited in the application the whole document Α WO 99 34722 A (ROYAL APPLIANCE MFG.CO.) 1 15 July 1999 (1999-07-15) page 9, line 22 -page 19, line 2; claim 1; figures 1-16 -/--Further documents are listed in the continuation of box C. Patent family members are listed in annex. Special categories of cited documents : "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the 'A' document defining the general state of the art which is not considered to be of particular relevance 'E' earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled citation or other special reason (as specified) "O" document reterring to an oral disclosure, use, exhibition or in the art. document published prior to the international filing date but tater than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 08/02/2002 1 February 2002 Authorized officer Name and maiting address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 Munzer, E

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CN1422187A abstract

Apparatus for separating particles from a fluid flow

Apparatus (10, 110, 210, 310) for separating particles from a fluid flow comprises an upstream cyclonic separator (12, 112, 212, 312) and a plurality of downstream cyclonic separators (26, 126, 226, 326) arranged in parallel with one another. Each of the downstream cyclonic separators (26, 126, 226, 326) projects, at least in part, into the interior of the upstream cyclonic separator (12, 112, 212, 312). This arrangement provides a compact and economic apparatus which is particularly suitable for applications such as vacuum cleaners.